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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/242,772	06/25/1999	WILLEM JAN MARIE VAN DE VEN	702-990278	1485

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EXAMINER
SPIEGLER, ALEXANDER H

ART UNIT	PAPER NUMBER
1637	29

DATE MAILED: 03/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	09/242,772	VAN DE VEN ET AL.	
	Examin r	Art Unit	
	Alexander H. Spiegler	1637	

-- The MAILING DATE of this communication appears on the c ver sheet with the c rrespondence address --

Period for R ply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 January 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *28,29,32-35 and 47-49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *28,29,32-35 and 47-49* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 6, 2003 has been entered. Currently, claims 28, 29, 32-35 and 47-49 are pending. This action is made NON-FINAL. Any objections and rejections not reiterated below are hereby withdrawn. Specifically, the 112, 1st paragraph enablement rejection has been withdrawn in response to Applicants' amendments and arguments.

Sequence Notes

2. This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 C.F.R. 1.821 (a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 C.F.R. 1.822 and 1.824-1.825 for the reason(s) set forth on the attached Raw Sequence Listing Error Report.

Specification

3. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code (see page 18, for example). Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 28, 29, 32-35 and 47-49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A) Claim 28 is indefinite over "the cDNA sequence" because this recitation lacks antecedent basis, since no "cDNA sequence corresponding to said PLAG1 gene" is previously mentioned.

B) Claim 28 is indefinite over "a polypeptide sequence which is at least 75% identical to a polypeptide sequence of PLAG1 in the region from zinc fingers 4 to 7" because it is not clear that a "polypeptide sequence which is at least 75% identical to a polypeptide sequence of PLAG1 in the region from zinc fingers 4 to 7" has the same function or codes for the same protein as the polypeptide sequence of the PLAG1 in the region from zinc fingers 4 to 7. It is not clear whether or not the 25% that is not identical to the polypeptide sequence of the PLAG1 in the region from zinc fingers 4 to 7 alters the function of the protein. For example, if one has a polypeptide sequence which is at least 75% identical to a polypeptide sequence of the PLAG1 in the region from zinc fingers 4 to 7, it is not clear that by having only 75% homology to a part of the polynucleotide that encodes the PLAG1 zinc fingers 4 to 7, one may disrupt or remove one of the zinc fingers, thus altering the function.

Applicants argue, "Claim 28 has been amended to recite the function of the protein to clarify that non-identical protein retains the function of the unaltered protein." This argument is not persuasive, since the claim still does not contain specific functional language.

C) Claims 28, 29, 32-35 and 47-49 are indefinite over "gene" because it is not clear whether this refers cDNA or genomic DNA (including introns). This term is not defined in the

specification, and the claims, refer to both possibilities of a gene (i.e. that it is either cDNA or genomic DNA), e.g., "a gene having at least one exon" or "the protein encoded by the PLAG1 gene".

MAINTAINED REJECTIONS

6. Claims 28-29, 32-35, and 47-49 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a written description rejection.

The claimed invention is drawn to:

1) A nucleic acid in isolated form wherein the nucleic acid encodes a protein which is **at least 75% identical** to protein encoded by SEQ ID NO: 116 **in the region from zinc fingers 4 to 7** as represented in SEQ ID NOS: 120-123;

2) An isolated nucleic acid wherein the nucleic acid is one of oligonucleotide, a polynucleotide, and a gene having a sequence of **at least one exon** of the PLAG1 gene, a sequence complementary thereto, or antisense version of the nucleic acid, wherein said PLAG 1 gene encodes a protein comprising **at least one** of the zinc fingers 1 to 7 represented by the sequences in SEQ ID NOS: 117-123.

3) A macromolecule comprising an isolated nucleic acid, comprising a fusion of at least two of an oligonucleotide, a polynucleotide, and a gene, wherein at least one of an oligonucleotide, a polynucleotide, and a gene comprises a nucleic acid sequence of **at least one**

exon consisting of the PLAG1 gene, and wherein at least a second one of said oligonucleotide, polynucleotide, or gene comprises **at least one exon** of the CTNNB1 gene;

4) A macromolecule comprising an isolated nucleic acid, comprising a fusion of at least two of an oligonucleotide, a polynucleotide, and a gene having a sequence of **at least one exon** of the CTNNB1 gene.

In Figure 4A of the specification, Applicant discloses the cDNA of the nucleotide sequence of the PLAG1 gene (SEQ ID NO: 116), and on page 41 of the specification, Applicant discloses genomic organization of the PLAG1 gene including regulatory regions, i.e. introns, exons, coding and non-coding regions. However, the specification fails to describe an isolated nucleic acid wherein the nucleic acid encodes a protein which is **at least 75% identical** to protein encoded by SEQ ID NO: 116 **in the region from zinc fingers 4 to 7** as represented in SEQ ID NOS: 120-123; the nucleic acid is one of oligonucleotide, a polynucleotide, and a gene having a sequence of **at least one exon** of the PLAG1 gene, a sequence complementary thereto, or antisense version of the nucleic acid, wherein said PLAG 1 gene encodes a protein comprising **at least one** of the zinc fingers 1 to 7 represented by the sequences in SEQ ID NOS: 117-123; a nucleic acid, comprising a fusion of at least two of an oligonucleotide, a polynucleotide, and a gene, wherein at least one of an oligonucleotide, a polynucleotide, and a gene comprises a nucleic acid sequence of **at least one exon** consisting of the PLAG1 gene, and wherein at least a second one of said oligonucleotide, polynucleotide, or gene comprises **at least one exon** of the CTNNB1 gene; or a nucleic acid, comprising a fusion of at least two of an oligonucleotide, a polynucleotide, and a gene having a sequence of **at least one exon** of the CTNNB1 gene. These nucleic acids encompass a large genus and sequences that are not described or disclosed.

Additionally, the specification fails to adequately describe the various nucleotide variations, such as substitutions, insertions, deletions, nonsense or frameshift mutations that are encompassed by the gene. Each of the claimed invention is a genus fore which a representative number of species for each genus must be disclosed to meet the written description requirement of 112, first paragraph. As set forth by the Court in *Vas Cath Inc. V. Mahurkar*, 19 USPQ2d 1111, the written description must convey to one of ordinary skill in the art "with reasonable clarity" that as of the filing date applicant was in possession of the claimed invention. Absent a written description disclosing a representative number of species of the isolated nucleic acid and macromolecule of claims 28-29, 32-35, and 47-49 has not been demonstrated "with reasonable clarity" that applicant was, in fact, "in possession of the claimed invention" at the time the application for patent was filed.

Applicant's attention is also drawn to the "Guidelines for Examination of Patent Applications Under the 35 U.S.C. 112, 1st Paragraph, Written Description Requirement" (published in Federal Register/Vol. 66, No. 4/Friday, January 5, 2001/Notices; p. 1099-1111).

> Possession may be shown in many ways. For example, possession may be shown, *inter alia,* by describing an actual reduction to practice of the claimed invention. Possession may also be shown by a clear depiction of the invention in detailed drawings or in structural chemical formulas, which permit a person skilled in the art to clearly recognize, that applicant had possession of the claimed invention. An adequate written description of the invention may be shown by any description of sufficient, relevant, identifying characteristics so long as a person skilled in the art would recognize that the inventor had possession of the claimed invention...
>
> Factors to be considered in determining whether there is sufficient evidence of possession include the level of skill and knowledge in the art, partial structure, physical and/or chemical properties, functional characteristics alone or coupled with a known or disclosed correlation between structure and function, and the method of making the claimed invention. Disclosure of any combination of such identifying characteristics that distinguish the claimed invention from other materials and would lead one of skill in the

art to the conclusion that the applicant was in possession of the claimed species is sufficient. (pgs. 1105-1106).

Applicants have not shown an "actual reduction to practice, a clear depiction of the invention in detailed drawings or in structural chemical formulas, or any description of sufficient, relevant, identifying characteristics so long as a person skilled in the art would recognize that the inventor had possession of the claimed invention" for any of the claimed inventions. Applicants have only taught an adequate written description of SEQ ID NO: 116, which have a specific diagnostic function.

Applicants Arguments

Applicants amended the claims to change the recitation of "at least part of PLAG1 gene" to "at least one exon". However, this amendment still encompass a large genus of nucleic acid sequences that are not adequately described, and therefore, Applicants argument that the amendment overcomes the rejection is not persuasive.

Conclusion

7. No claims are allowable.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander H. Spiegler whose telephone number is (703) 305-0806. The examiner can normally be reached on Monday through Friday, 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on (703) 308-1119. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 and (703) 305-

3014. Applicant is also invited to contact the TC 1600 Customer Service Hotline at (703) 308-0198.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

Alexander H. Spiegler
March 24, 2003

KENNETH R. HORLICK, PH.D
PRIMARY EXAMINER
3/24/03